

| | | | | | |
|---|--|--|--|--|--|
| 1. Report No. N/A | | 2. Government Accession No. 93-0146 | | 3. Recipient's Catalog No. | |
| 4. Title and Subtitle The Airline Deregulation Evolution Continues: The Southwest Continues. | | | | 5. Report Date 1993 | |
| | | | | 6. Performing Organization Code X-50 | |
| 7. Author(s) Randall D. Bennett and James M. Craun | | | | 8. Performing Organization Report No. | |
| 9. Performing Organization Name and Address U.S. Department of Transportation Office of Aviation Analysis 400 7th Street, SW Washington, DC 20590 | | | | 10. Work Unit No. (TRAIS) | |
| | | | | 11. Contract or Grant No. | |
| 12. Sponsoring Agency Name and Address same | | | | 13. Type of Report and Period Covered Final report. | |
| | | | | 14. Sponsoring Agency Code | |
| 15. Supplementary Notes | | | | | |
| 16. Abstract The principal drivign force behind dramatic fundamental changes that have occurred and will occur in the U.S. airline industry over the next few years is the dramatic growth of low-cost Southwest Airlines. | | | | | |
| <div data-bbox="384 1102 758 1394" data-label="Image"> </div> <div data-bbox="883 1062 1338 1184" data-label="Image"> </div> <div data-bbox="943 1400 1386 1537" data-label="Text"> <p>19951002 041</p> </div> | | | | | |
| 17. Key Words Southwest Airlines Deregulation Airline economics | | | | 18. Distribution Statement | |
| 19. Security Classif. (of this report) | | 20. Security Classif. (of this page) | | 21. No. of Pages 31 | |
| | | | | 22. Price | |

THE AIRLINE DEREGULATION EVOLUTION CONTINUES

The Southwest Effect

Prepared by:

Randall D. Bennett
James M. Craun
Office of Aviation Analysis
U.S. Department of Transportation

THE SOUTHWEST EFFECT

Major Findings:

The principal driving force behind dramatic fundamental changes that have occurred and will occur in the U.S. airline industry over the next few years is the dramatic growth of low-cost Southwest Airlines:

- * A return to profitability hinges on developing lower-cost services in short haul markets and increasing fares in longer-haul markets:
 - * Other major airlines are giving up competing with Southwest's low-cost service for market share. Southwest's continuing expansion will force other airlines to bring about a major change in their cost structures by developing new, low-cost services in short-haul markets.
 - * The industry's inability to continue to charge relatively high fares in short-haul markets will, in turn, force a correction in the domestic industry's long-haul pricing structure where intense competition has produced fares that appear to be low in relation to costs.
- * The inability for existing airlines to compete with Southwest's much lower costs creates an even greater need for the government to encourage low-cost, new entry, as a discipline for Southwest's pricing behavior in the future, and to replace service of other major airlines that are scaling back service or exiting markets dominated by Southwest.

Southwest:

Southwest Airlines, long thought of as a Dallas Love Field niche airline, is the fastest growing, most profitable U.S. airline. Southwest does not operate the hub-and-spoke system of service used by every other major airline. Southwest specializes, instead, in very dense, short-haul markets, where it can provide frequent service.

Southwest is having a profound effect on the airline industry. The reason is its aggressive expansion and very low operating costs (Chart 1). With the exception of America West, the unit costs of the other major airlines are 50 to 70 percent higher than Southwest's costs. America West's unit costs are 20 percent higher. With such a cost disadvantage, other airlines simply cannot compete with Southwest at the low prices it can profitably charge. Southwest's much lower operating costs are making it the dominant airline today in the sense that Southwest, more than any other airline, is causing the

| | |
|--------------------|----------------------|
| Availability Codes | |
| First | Avail and/or Special |
| A-1 | |

DP
☒
☐
☐
50

industry to change. Other airlines cannot compete with Southwest in the same manner as they do each other.

Southwest's combination of low prices and high frequency service virtually eliminates, as an effective competitive weapon, the use of yield management techniques that other airlines have successfully used on each other and traditional new entrant airlines. And other airlines' hubs have not protected them from Southwest. Most of its markets involve another airline's hub city, sometimes two hub cities, yet Southwest dominates market share virtually every where it serves. With its focus on short-haul markets, connecting services of hub-and-spoke airlines are not a realistic competitive alternative. And focusing on dense markets minimizes the advantage of flow traffic hub-and-spoke airlines typically use to discourage competition by other airlines.

Southwest is rapidly dominating dense short-haul markets throughout the country, with the exception of the East Coast where it does not operate. For the year ended September 30, 1992, Southwest controlled or strongly effected price for more than 60 percent of the travelers in the most dense markets under 500 miles (markets with 500 or more passengers per day). The difference in price is very dramatic. The average prices for markets Southwest does not participate in for distances of 0 - 250 miles and 251 - 500 miles, are \$109.92 and 130.32, respectively. In Southwest markets of similar distances, the average prices charged by all carriers are \$56.29 and \$57.61, respectively.

Southwest's increasing dominance can be illustrated in a number of ways. In the top 100 48-state markets for the industry, which account for about one third of domestic passengers, Southwest is the dominant airline, with more passengers than each of the Big Three (64 percent, 110 percent and 27 percent more than American, Delta and United, respectively), and almost as many passengers as the other five major airlines combined. Southwest's average share in its own top 100 markets is 65 percent, compared with less than 40 percent for any other airline except Northwest (43 percent). In its own top 100 markets, Southwest is the dominant airline in 93, has a 50 percent or greater share in 80 and has a 67 percent or better share in 53. No other airline comes close to these numbers in their own respective top 100 markets. And Southwest's dominance is almost universally pervasive. Compared with a year earlier, its most recent market shares are up in virtually every one of its top 100 markets, often dramatically. In several instances competitors have dropped out. All this despite the fact that 82 of Southwest's top 100 markets involves another airline's connecting hub -- 16 involve two connecting hubs.

A review of how the industry pricing structure has evolved under deregulation will help set the stage for understanding the implications of Southwest's success.

Industry Structural Changes:

A useful benchmark for evaluating changes in the industry's pricing structure is the Standard Industry Fare Level (SIFL). The SIFL, in effect, was the lowest unrestricted coach fare in each market on July 1, 1977, and has been updated since, biannually, to reflect changes in operating costs.¹

Charts 2 through 8 reveal interesting changes in the industry's pricing structure. Chart 2 shows that in 1979 average fares were very close to the SIFL in markets of distances up to 750 miles, then gradually declined in relation to SIFL so that at in markets of longer distances average fares were about 25 percent below the SIFL fares. Chart 3 shows that by 1984, average prices had dropped in relation to the SIFL in market of all distances except between 501 to 750 miles. This reflected the addition to the system of several new entrant airlines, including Air Cal, America West, New York Air, People Express, Pacific Southwest, and Southwest, which stimulated aggressive price competition.

The first dramatic change in the industry's pricing structure occurred during the next four years when hubbing greatly proliferated. Chart 4 shows that in relation to the SIFL prices in short haul markets greatly increased while prices in longer-haul markets dropped considerably. Both changes appeared to move average prices in the right direction in relation to pre-deregulation costs, but both perhaps overcorrected, leaving prices in short-haul markets too high, and long-haul prices short-haul markets to low, in relation to costs of providing service. This fits our understanding of the competitive effects of hubbing, where numerous "hubs in-between" compete vigorously for medium- to long-haul travelers while hubbing carriers are able to exert some measure of price control in short-haul markets to their respective connecting hubs.

The second dramatic change in the industry's pricing structure had occurred by 1991. Chart 5 shows that while prices in

¹ Two basic facts should be understood about the SIFL. First, since it was set at the unrestructured coach fare level, to the extent carriers offered other lower fares such as offpeak (nightcoach) or discount fares, the actual average prices charged tended to be lower. Second, the 1977 coach fares were "cost related" but not "cost based," that is, unrestricted coach fares over 400 miles were set at levels 2 to 4 percent above costs and fares 400 miles were set at levels as much as 22.5 percent below costs at the shortest distances and gradually increasing to the cost line at 400 miles.

longer-haul markets remained low in relation to the SIFL, actually declined a little more, prices in short-haul markets had declined very significantly. Chart 6 illustrates the reason -- the "Southwest Effect." Industry prices, excluding Southwest markets, did not decline in relation to the SIFL as it existed in 1988, which means that the reasons the overall industry average prices declined in relation to SIFL are the low fares in Southwest markets, and by the much larger proportion of travelers affected by Southwest's pricing policies. These same basic trends continue in the most recent annual data, for the year ended September 30, 1992, shown in Charts 7 and 8.

Note that the airline industry made a profit in 1988 despite the fact that long-haul fares had declined, relatively, because the industry had managed to significantly increase its short-haul fares. The significant decline in these prices clearly has been a factor in the industry's financial performance in recent years. The differences between "Actual" and "Actual-WN" lines on Charts 6 and 8 represent the fare decreases resulting from Southwest's pricing policies. Had all traffic moved at the higher prices, domestic industry revenues would have been \$2.5 to \$3.0 billion higher in 1992.²

Thus the industry's profitability picture has been compounded -- long-haul prices that are perhaps too low in relation to cost because they are so competitive, and, more recently, short-haul prices that are too low because of very low-cost Southwest. Given these constraints, it would appear that in order to return to profitability the other major airlines in the industry must increase their long-haul prices, and reduce their short-haul costs.

The cause of the extreme competition in prices in medium- to longer-haul markets is that, in addition to whatever single plane service that may be available, most also have numerous on-line connecting alternatives. In other words, the rapid growth of the number of connecting hubs has greatly intensified competition for most passengers in markets of 1,000 miles or more. But the industry now shows signs of responding to this by scaling back their hubbing operations. The best example of this is American, which has announced the scaling back of operations at three of its hub complexes. USAir also greatly reduced its operation at Dayton. These kinds of developments will eventually reduce the level of competition on longer-haul markets so that the carriers can increase prices to more economic levels.

² While not all traffic would move at the higher prices, revenue would have been substantially higher, and, costs would have been lower. Southwest's entry often causes incumbent carrier revenues to drop by half, despite a greater traffic volume, which, at the least, results in added traffic handling costs, and sometimes added capacity costs as well.

The Southwest Effect:

A review of Southwest's experience in the California Corridor, the largest domestic market in terms of number of passengers, demonstrates how quickly Southwest gains a dominant presence in dense markets, and the consequences of Southwest's success. This is a prime example of how Southwest is changing the industry. This shows that other major airlines attempted to compete for market share for several years in the face of Southwest's low-cost service, but that they have finally given up trying to do that. Charts 9 through 20 illustrates price, traffic and competitive intensity in the California Corridor, beginning in the first quarter of 1989, or just before Southwest entered.³ Southwest has entered 3 of the eight airport pairs, OAK-ONT in 89/3, OAK-BUR in 90/2, and OAK-LAX in 91/2. Chart 9 shows that in just three and one-half years Southwest has become the dominant carrier overall, despite not providing any service to San Francisco, which was the dominant corridor airport in early 1989. Southwest now carries 80 percent of all OAK-LAX area traffic and has 42 percent of the total market, compared with second-place United's 37 percent, and SFO is a United hub.

Chart 10 shows than when Southwest entered its first California Corridor airport pair -- OAK-ONT -- prices declined by 60 percent and traffic tripled. The traffic increase did not come at the expense of traffic in other airport pairs, because when Southwest entered OAK-ONT prices in all 8 airport pairs dropped dramatically, leading to traffic increases in each. Note that average fares have continued to be low and traffic has continued to increase, through the third quarter of 1992.

Chart 11 shows another remarkable response to Southwest's entry in the OAK-BUR airport pair in 90/2. Prices dropped 55 percent and traffic increased six-fold. This traffic response reflects an almost tripling of capacity as United added service in this airport pair simultaneously with Southwest. Note that when Southwest entered OAK-ONT, competitors in the OAK-BUR market initially dropped price, and then quickly returned price to its pre-Southwest level just before Southwest's entry in the OAK-BUR airport pair. Subsequent to Southwest's entry, prices have remained low, although they have increased a little, apparently due to greatly increased load factors. Traffic in this airport pair has declined as competitors have exited and Southwest has not fully replaced their capacity.

Chart 12 illustrates the Southwest Effect in the OAK-LAX airport pair. By the time Southwest entered in 91/2, responses to its entry in other California Corridor airport

³ The California Corridor includes San Francisco and Oakland, on the one hand, and Los Angeles, Burbank, Ontario, and Long Beach, on the other.

pairs had competed price down, but Southwest's entry nevertheless produced big traffic increases.

Chart 13 is important. Oakland-Long Beach is the only Oakland airport pair not served by Southwest. After initially attempting to compete with Southwest for market share, as Southwest entered other California Corridor airport pairs, Alaska Airlines, the only carrier in this airport pair, gave up when Southwest entered its third corridor airport pair. Very clearly, Alaska Airlines decided that it would not continue struggling for market share with Southwest at Southwest's price levels. For each of the past 5 quarters Alaska Airlines has steadily increased its price, by 60 percent from its low point, despite a loss of traffic.

Chart 14 shows that for all four Oakland- Los Angeles area airport pairs combined (Southwest is in three of them), traffic is more than triple the pre-Southwest entry level, and prices, despite showing some small increases during the past year, reflecting high average load factors as Southwest has not fully replaced the capacity of exiting airlines, are still about 50 percent below the pre-Southwest entry level.

Turning to the San Francisco airport pairs (Charts 15 through 19), and the entire California Corridor (Chart 20), we see the same picture in the OAK-LGB airport pair. After responding strongly to Southwest's entry in the first 2 corridor airport pairs, once Southwest entered its third airport pair, OAK-LAX, carriers have either exited, or have begun to steadily, and, significantly, increase prices despite a major loss of traffic.

The experience for the corridor overall is that average prices are down by one third, and traffic is up by 60 percent on only 6 percent more capacity as average load factors have risen from under 50 percent to 67 percent. Clearly, consumers are better off as a consequence of Southwest's entry into the California Corridor.

But equally noteworthy, this review of the California Corridor vividly illustrates that Southwest's competitors, after initially competing for market share, have learned that they cannot economically compete for local traffic with Southwest with the services they now provide. Eight airlines have discontinued service in one or more of the eight airport pairs, and the few survivors are quickly moving back toward their old fare levels without regard to market share; i.e., they are effectively surrendering market share, and short-haul markets, to Southwest.

But this probably should be viewed as an interim strategy. Dense, short-haul markets account for more than one third of domestic passengers, and while the other major airlines cannot effectively compete with Southwest for that traffic with their

present services, they cannot totally concede this proportion of the total domestic market to Southwest. The other major airlines, therefore, will have to develop low-cost alternatives for competing with Southwest, perhaps in concert with other strategies to minimize the effect of losing local market share to Southwest. This holds the promise of the airline industry becoming much more efficient in short-haul markets, enabling the industry to carry passengers in such markets profitably at greatly reduced prices.

We know that other airlines are actively considering ways of competing with Southwest. United has had discussions with America West to take over some of its aircraft leases and (presumably markets) and create joint marketing efforts. Delta has indicated that it has a plan, but has declined to offer any information about its strategy. But the extent to which other ongoing airlines will succeed in developing strategies for competing with Southwest, and when they will be able to implement such strategies, cannot be predicted. The possibility that other airlines may not succeed in their efforts to become more competitive with Southwest, at least to the full extent necessary, places great emphasis on the need to encourage the development of low cost new entrant airlines.

The importance of new entrants:

Southwest's demonstrated ability to quickly dominate markets and force out competitors may not be perceived as a problem in the near term because Southwest offers lower prices, even as a monopolist, than other major airlines offer even in the most competitive markets. But while consumers continue to benefit from very low Southwest fares, in some markets, at least, a significant part of the initial competitive benefit is being eroded by the inability of existing airlines to effectively compete with Southwest.

We have demonstrated this trend in the California Corridor, and industry data show that this effect is occurring more broadly (Charts 21 through 23). While in relation to SIFL overall industry fares for the year ended September 30, 1992, appear similar to what they were in 1991, Chart 21 shows that fares in short-haul markets are actually somewhat higher despite Southwest's continuing expansion, and despite the 1992 summer fare war, which should have affected fares in non-Southwest markets more than the already low fares in Southwest markets. Charts 22 and 23 illustrate why.

Chart 22 shows that, like fares in the California Corridor, fares throughout the country in Southwest markets increased significantly faster than SIFL from 1991 to the year ended September 30, 1992. Like the California Corridor, the increase seems to be a result of Southwest's competitors increasing their prices. In virtually every competitive market in its top 100 markets Southwest now charges

significantly lower fares, on average, than its competitors charge. Chart 23 shows that industry fares in non-Southwest markets of up to 250 miles increased even faster in 1992. These charts suggest that Southwest, alone, is not enough to discipline airline industry prices in short-haul markets.

The competitive reaction to Southwest is affecting not just price, but service as well, as Southwest's competitors scale back their service or exit altogether. Even where competitors do not cut back their services, when the local market involves one of their hubs they appear to be allocating more of their capacity to passengers connecting at the hub rather than the local passengers to and from the hub. This could be significant because it might suggest that the hubbing carriers are trying to carve out a middle ground which would allow them to co-exist with low-cost airlines at their hubs; i.e., a competitive balance somewhere between the hubbing airlines dominating dense short-haul markets to their hubs as they have done in the past, and yielding such markets totally to Southwest or Southwest clones, as some now appear to be doing.

Unless and until the other major airlines succeed in developing a good response, low-cost new entrants will be the only vehicle to (1) replace other airlines' lost service, (2) exert cost-related price competition on Southwest which now seems to be fading, and (3) extend low-fare services to other markets (along with Southwest).

Without a competitive discipline, over time Southwest's fares will increase to cover cost inefficiencies that will creep in, and to extract monopoly profits. We already see Southwest's prices beginning to increase where it has forced out its competition and its load factors have attained relatively high levels. We do not yet know whether this is a short term phenomenon, until Southwest can increase its capacity to replace the capacity of exited carriers, or whether this is Southwest's strategy in the absence of more effective competition. And in the San Francisco airport pairs where Southwest does not directly operate, traffic has fallen quickly in reaction to sharp price increases and capacity reductions by the remaining airlines. In markets dominated by Southwest more effective low-cost competition is needed to keep fares low and to maintain a competitive level of service.

X X X

INDUSTRY COSTS PER AVAILABLE SEAT MILE (Domestic) **Year Ended September 30, 1992 (adjusted for distance)**

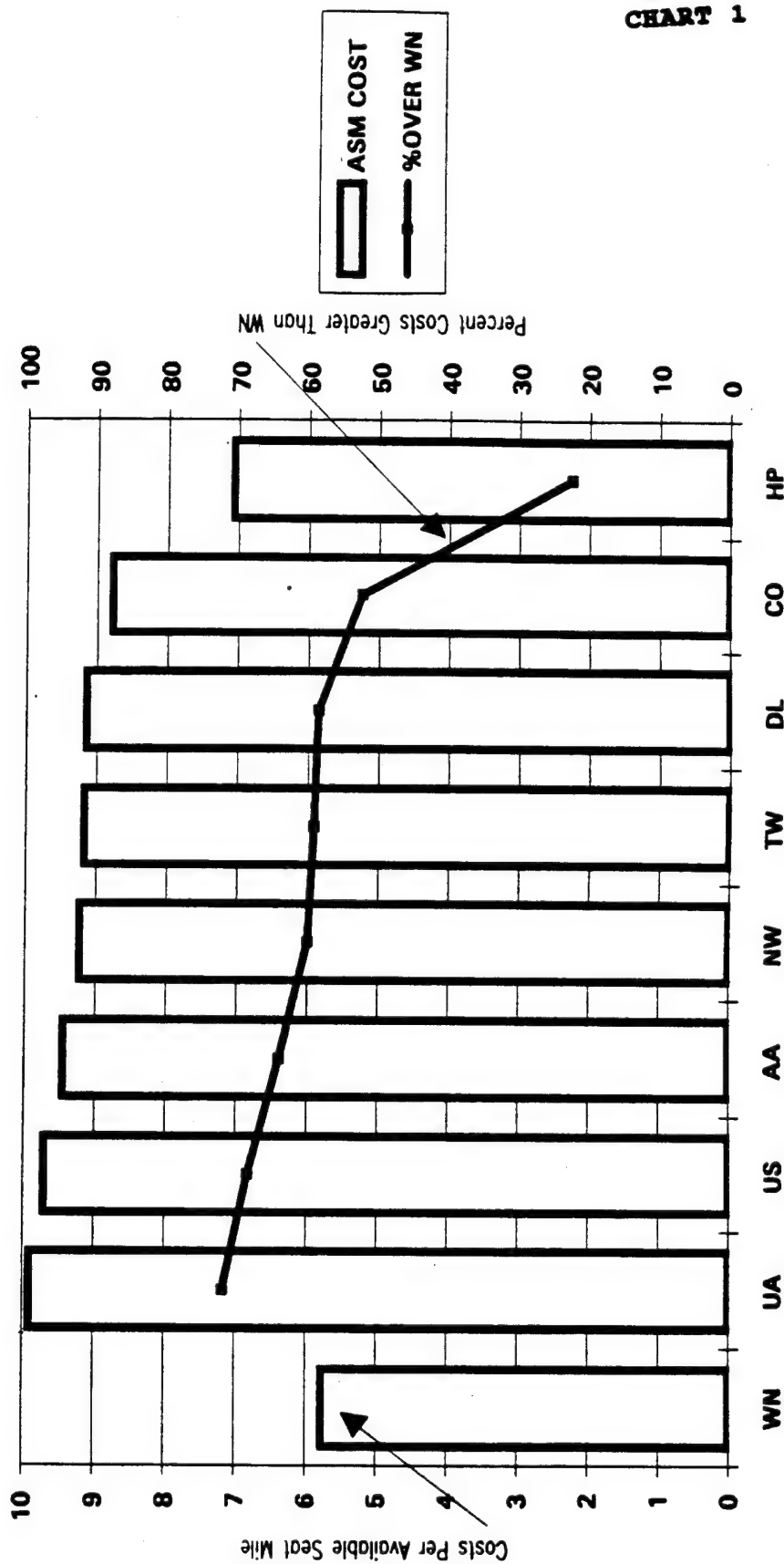


CHART 1

CHART 2

'79 ACTUAL YIELD VERSUS SIFL

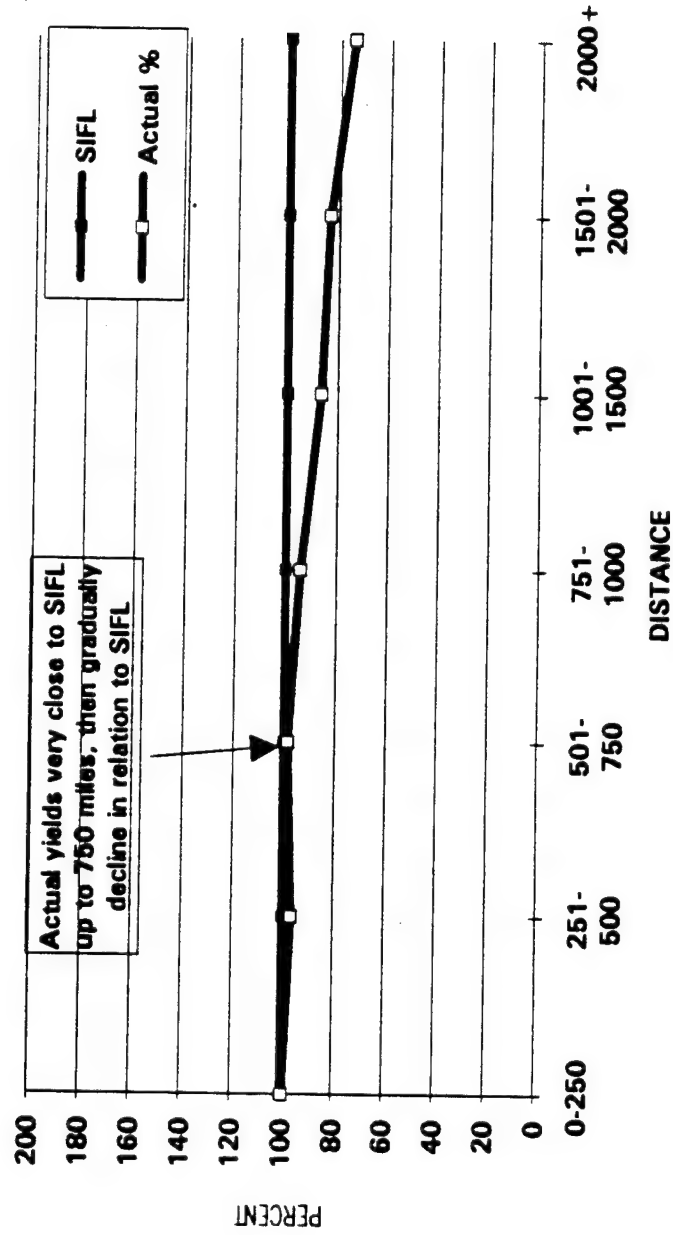


CHART 3

'84 ACTUAL YIELD VERSUS SIFL

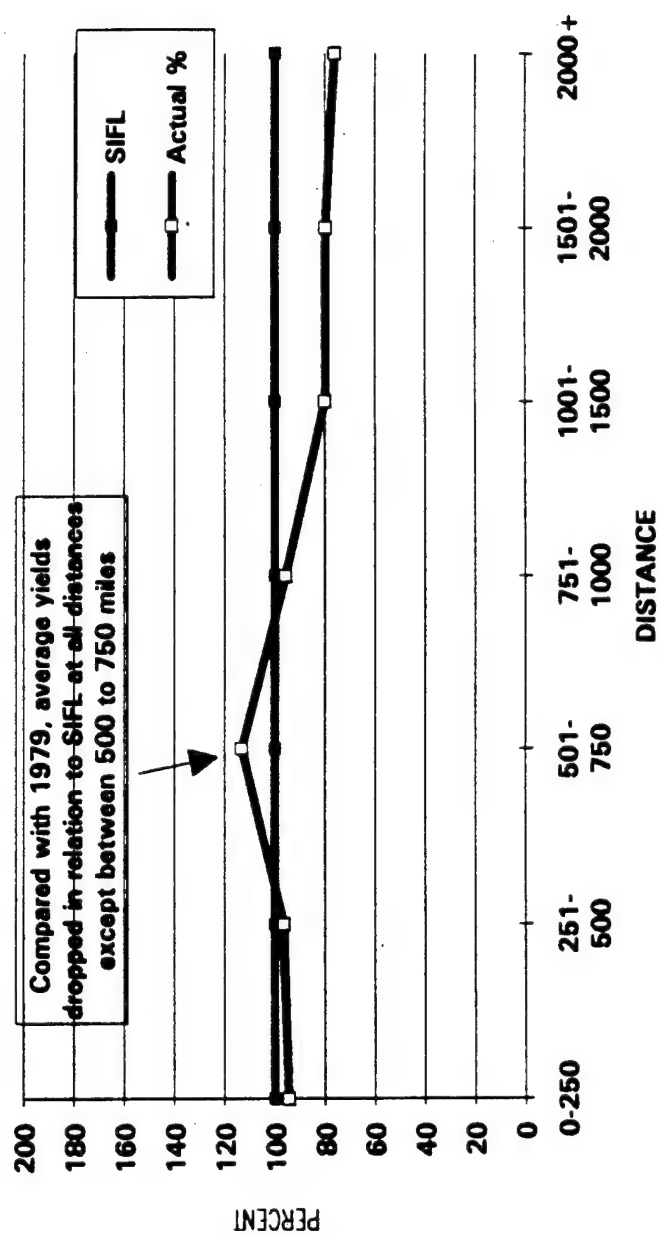


CHART 4

'88 ACTUAL YIELD VERSUS SIFL

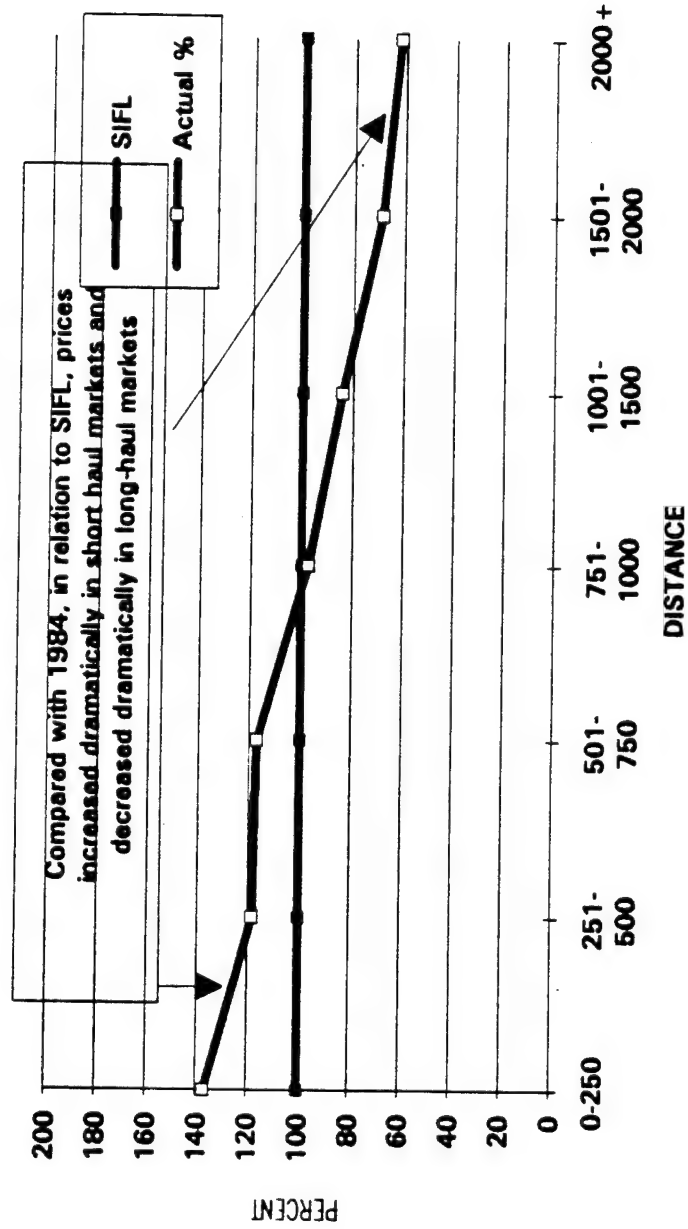
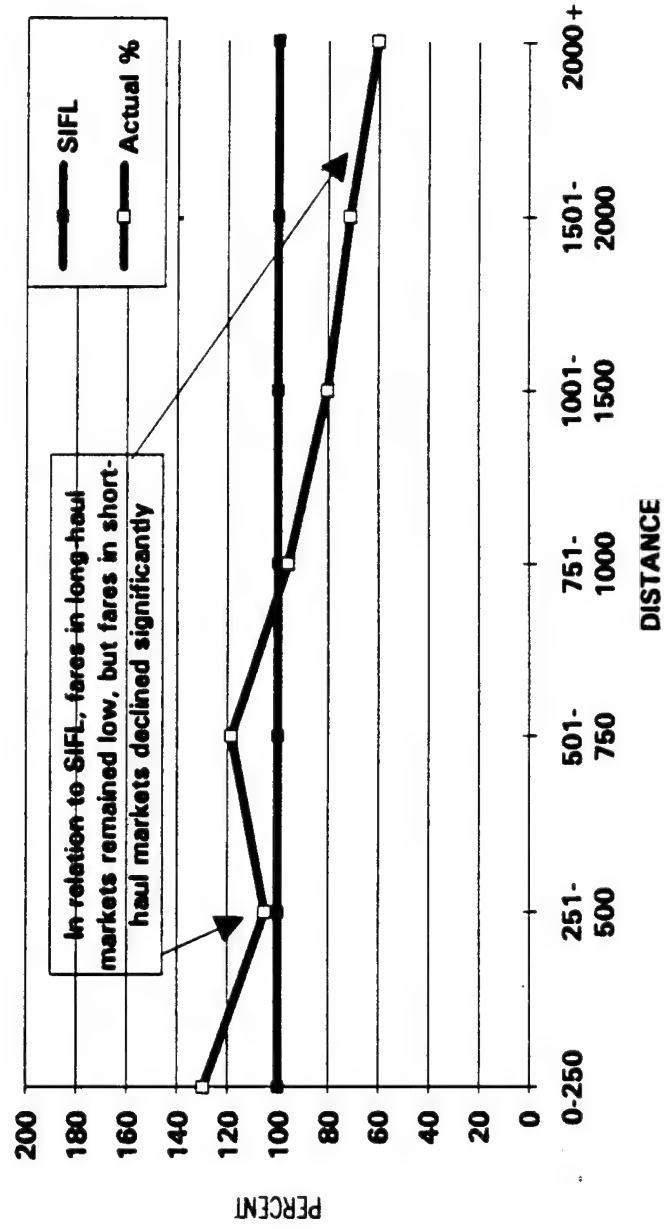


CHART 5

'91 ACTUAL YIELD VERSUS SIFL



'91 ACTUAL YIELD VERSIS SIFL (with and without Southwest markets)

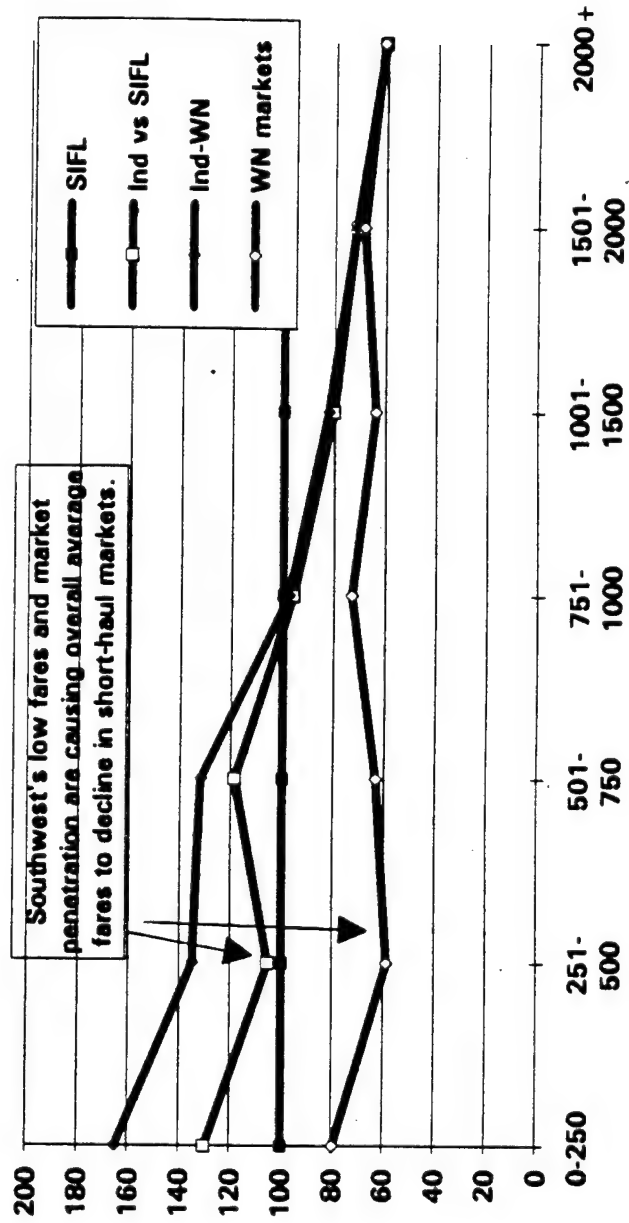


CHART 6

CHART 7

'92/3 ACTUAL YIELD VERSUS SIFL

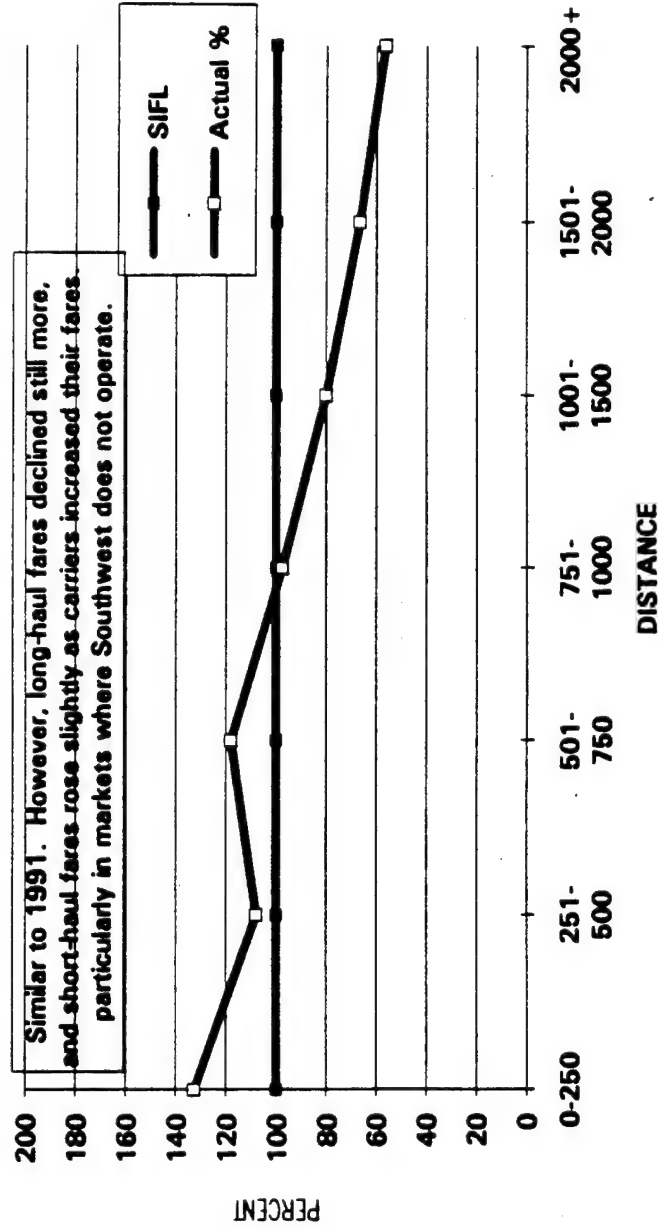
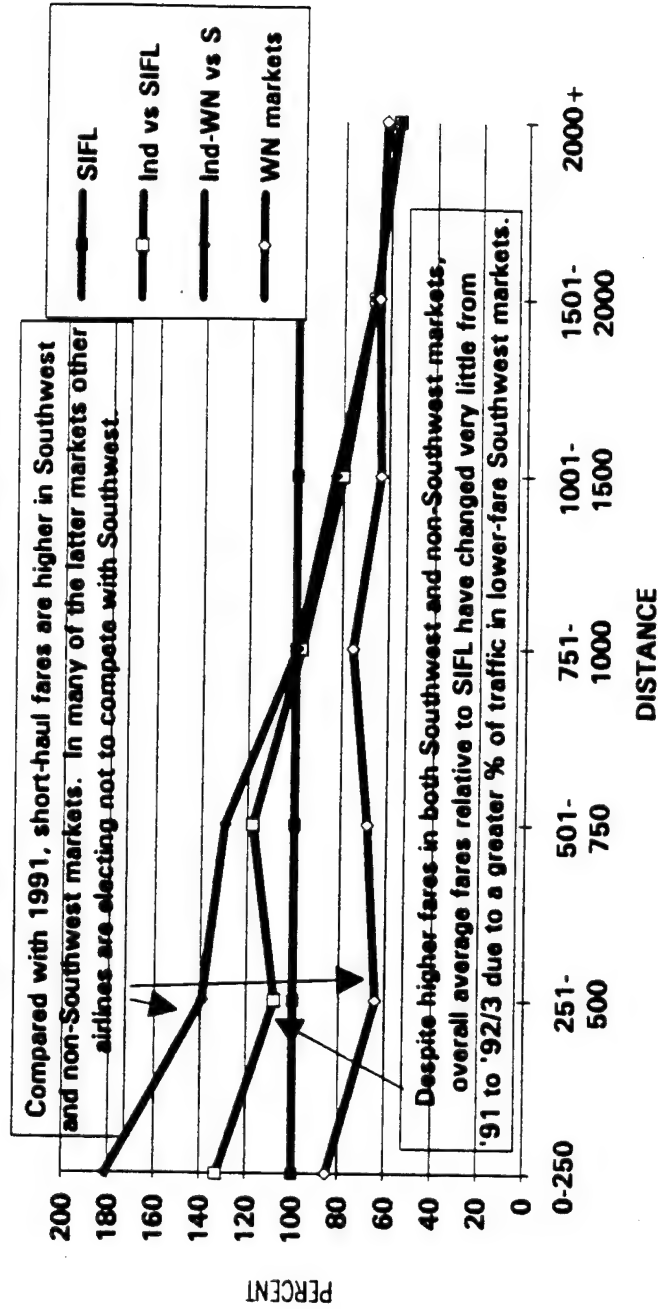


CHART 8

'92/3 ACTUAL YIELD VERSUS SIFL (with and without Southwest Markets)



**California Corridor
Southwest Market Share
(OAK and Total - WN does
not serve SFO in the Corridor)**

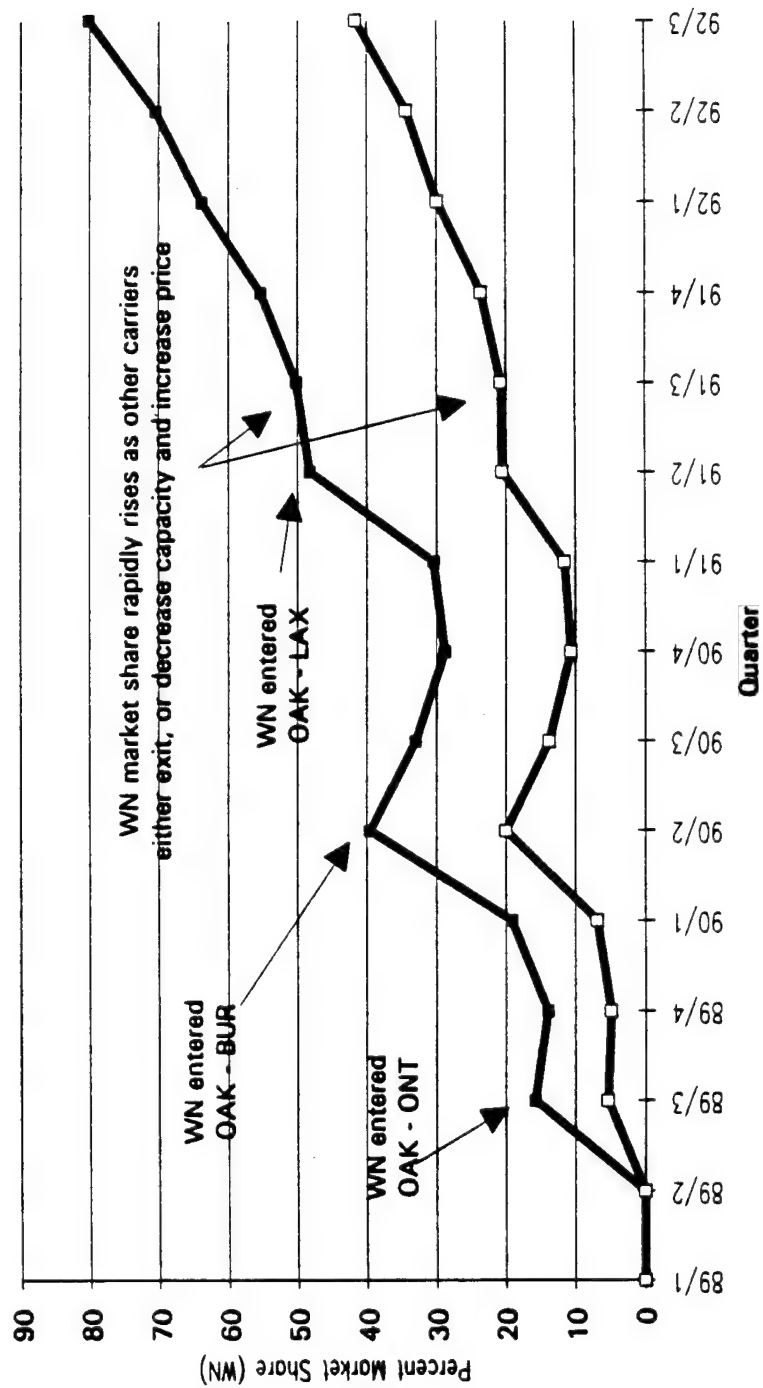
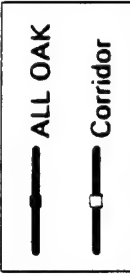


CHART 9



California Corridor: Oakland - Ontario Effect of Southwest Entry on Price and Traffic

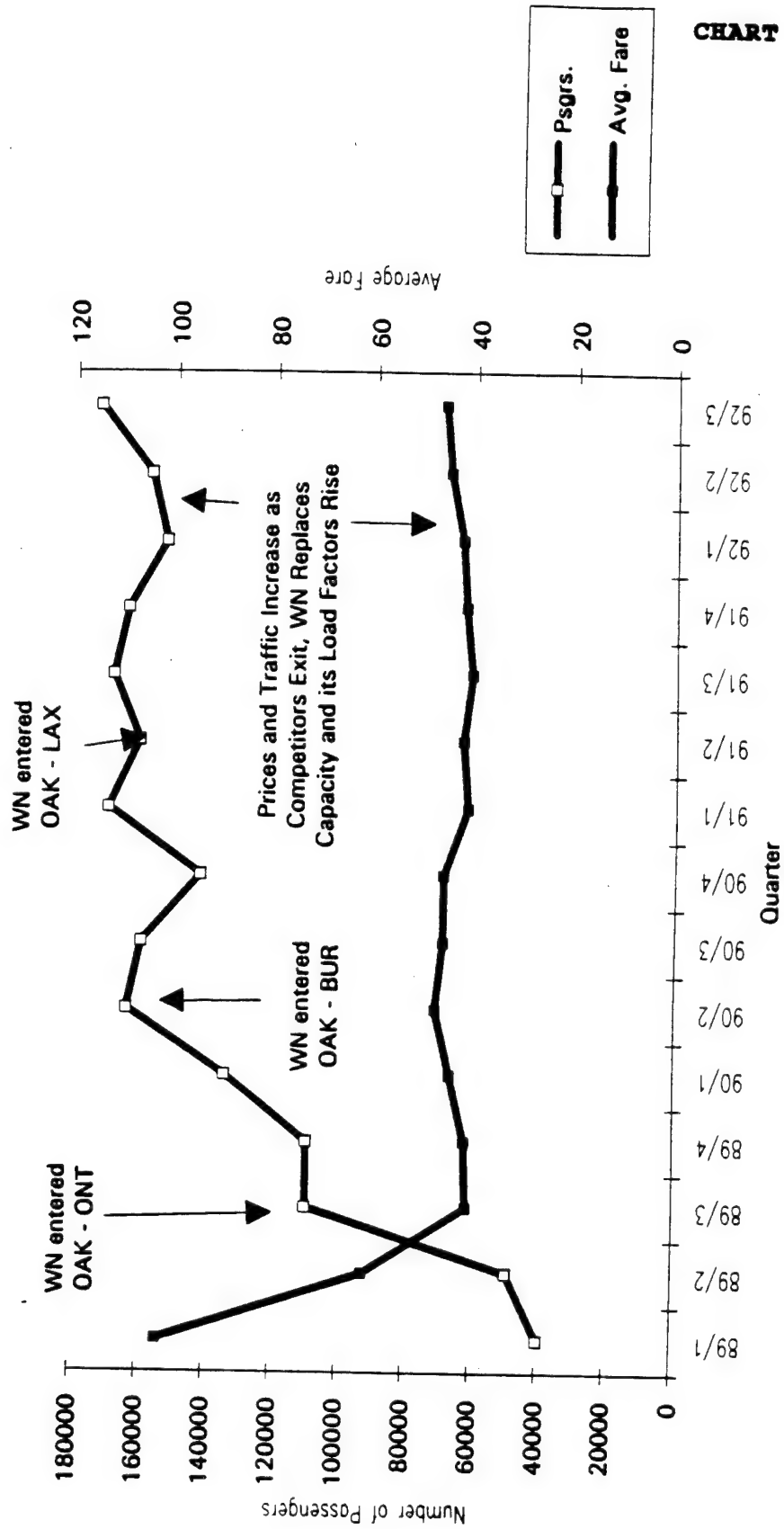
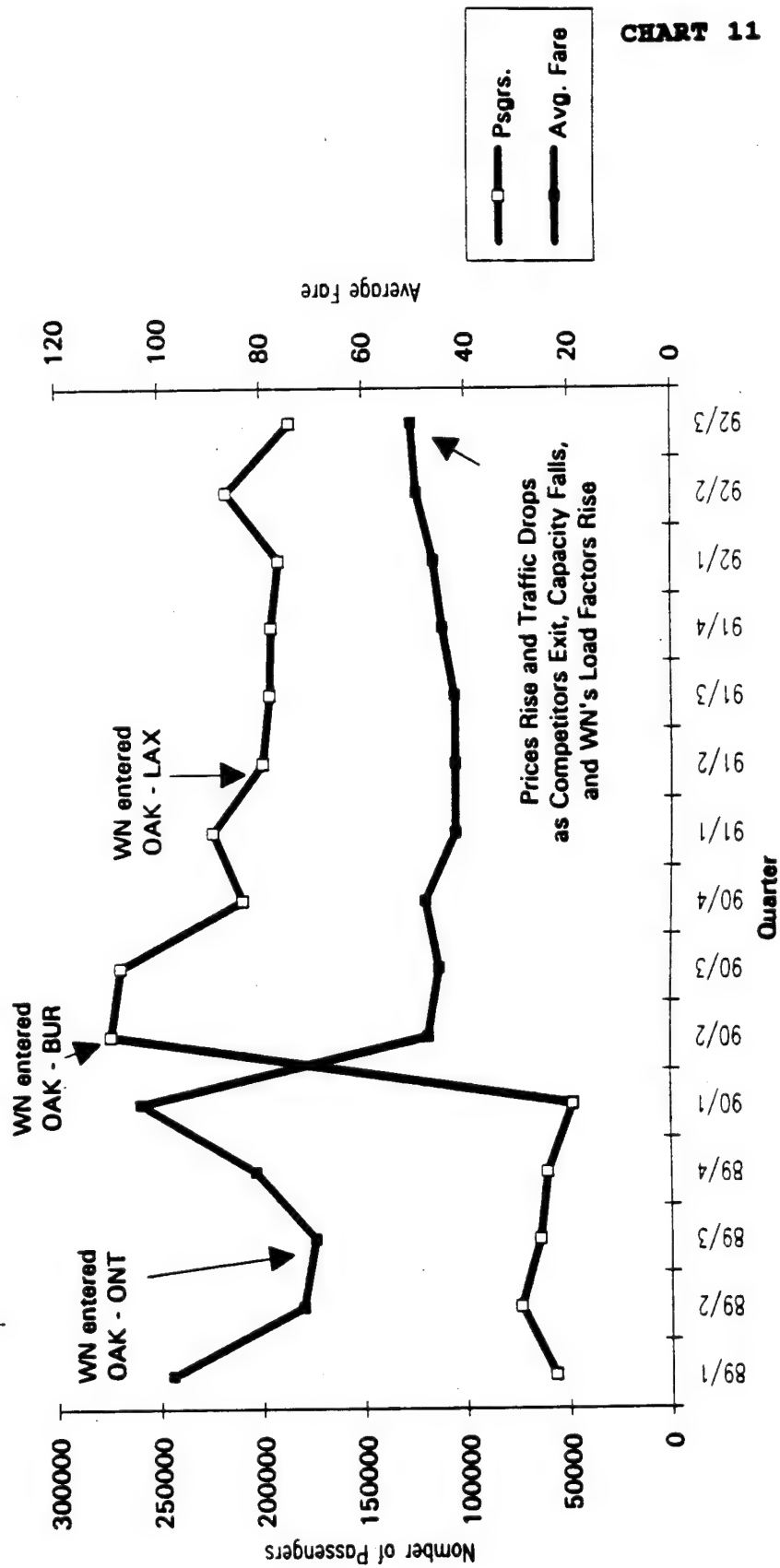
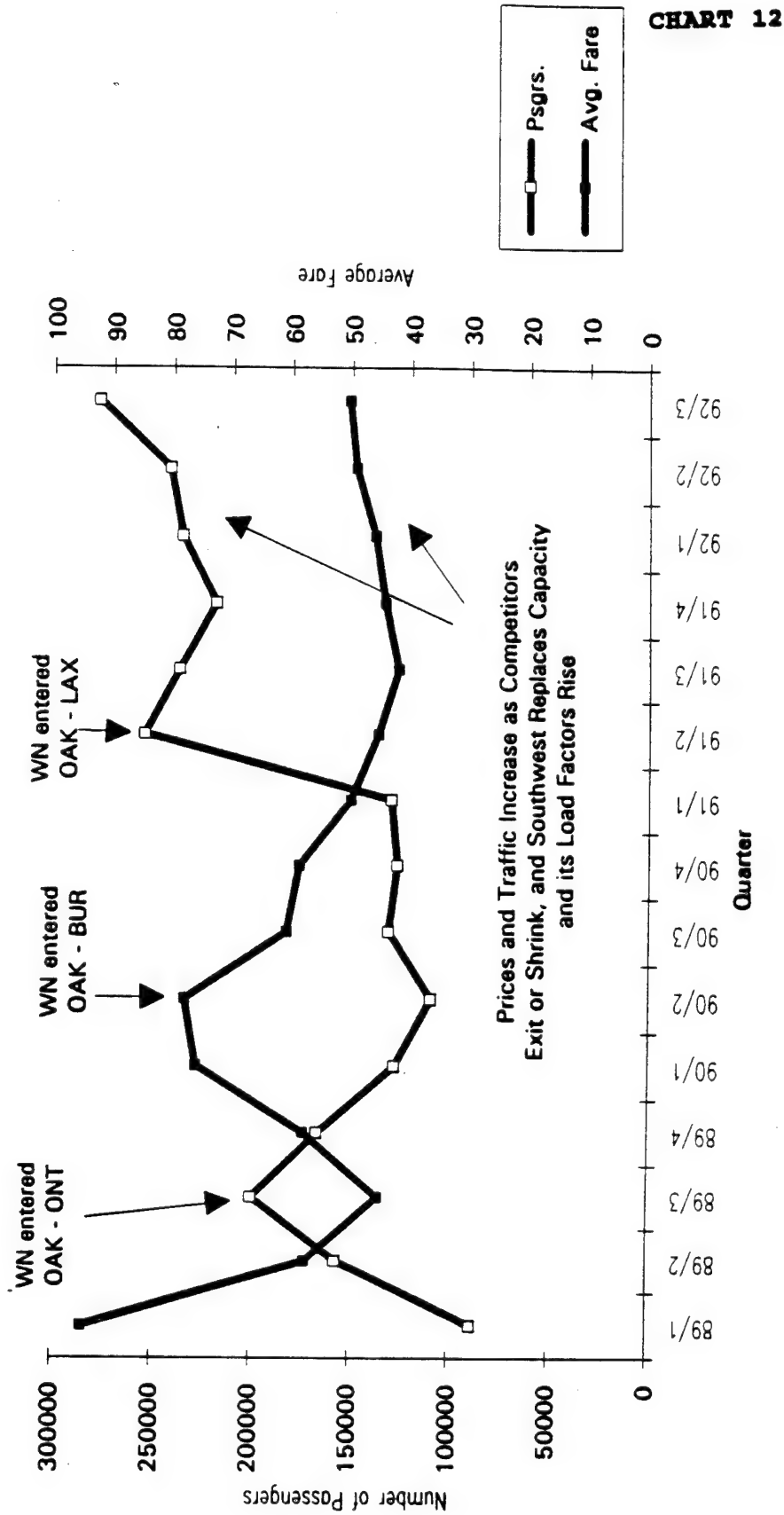


CHART 10

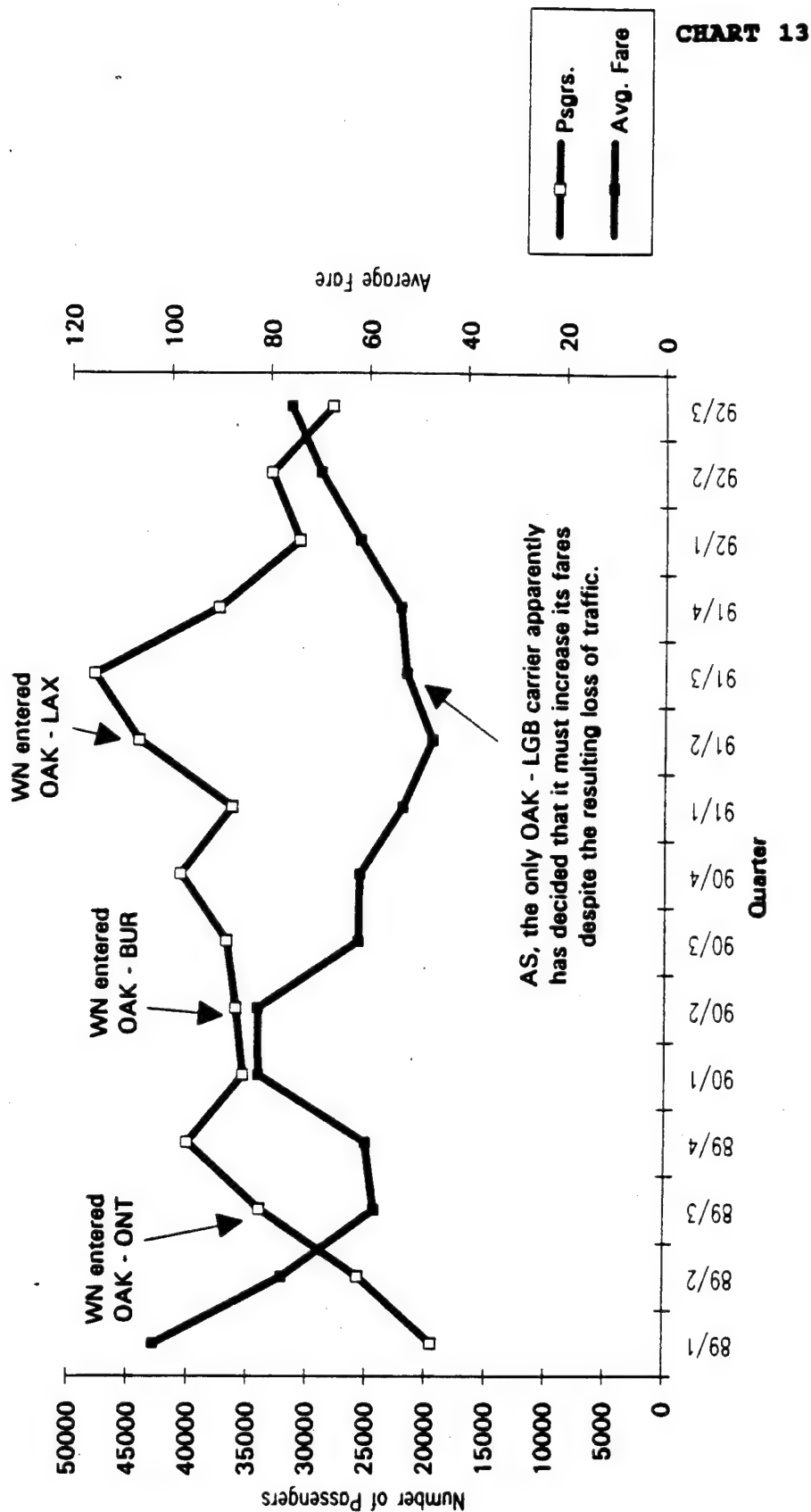
California Corridor: Oakland - Burbank Effect of Southwest Entry on Price and Traffic



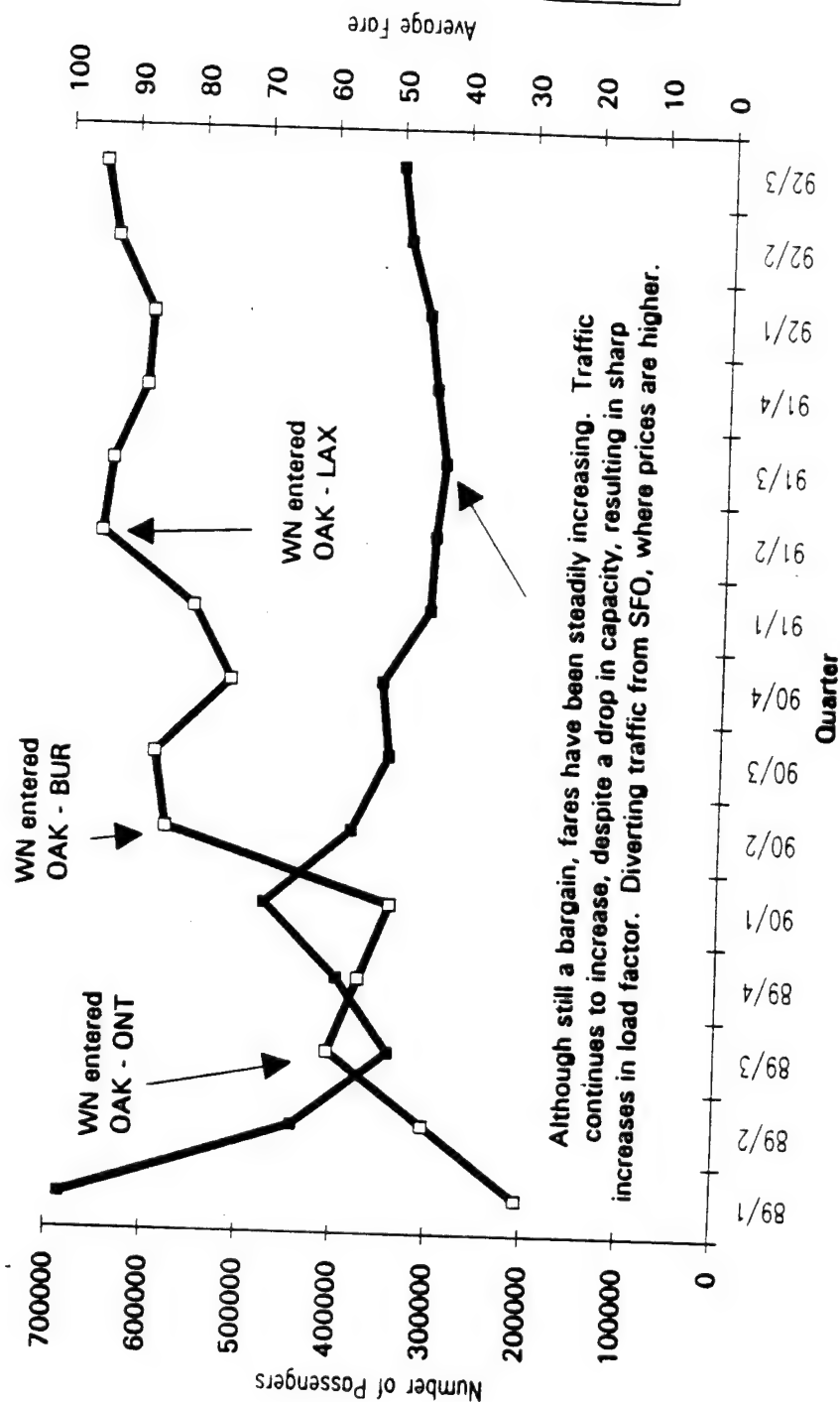
California Corridor: OAK - LAX Effect of Southwest Entry on Price and Traffic



California Corridor: OAK - LGB Effect of Southwest Entry on Price and Traffic



California Corridor: OAK - BUR/LAX/LGB/ONT **Effect of Southwest Entry on Price and Traffic**



California Corridor: San Francisco - Ontario Effect of Southwest Entry on Price and Traffic (entry at OAK. WN does not serve SFO in corridor)

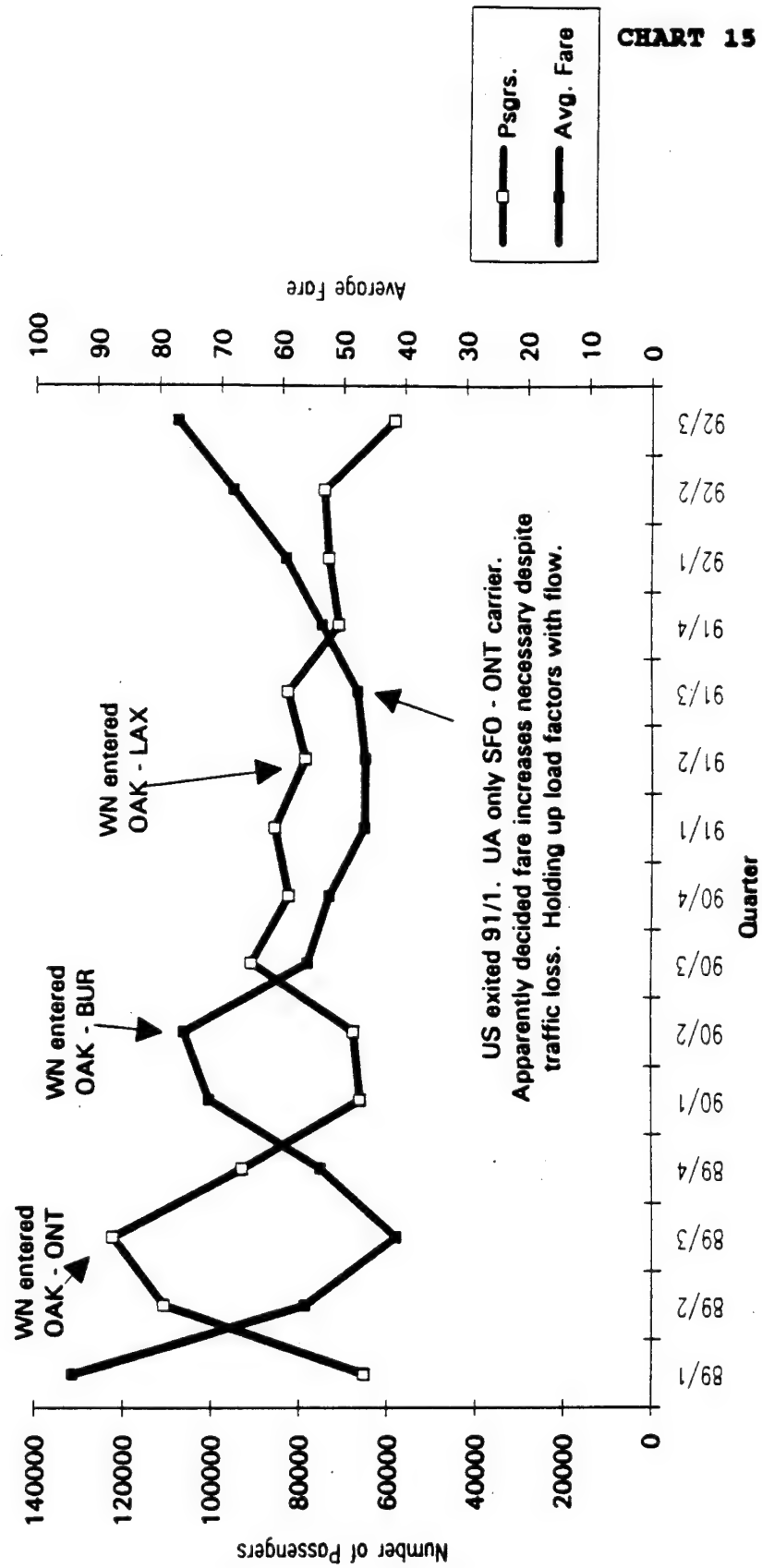
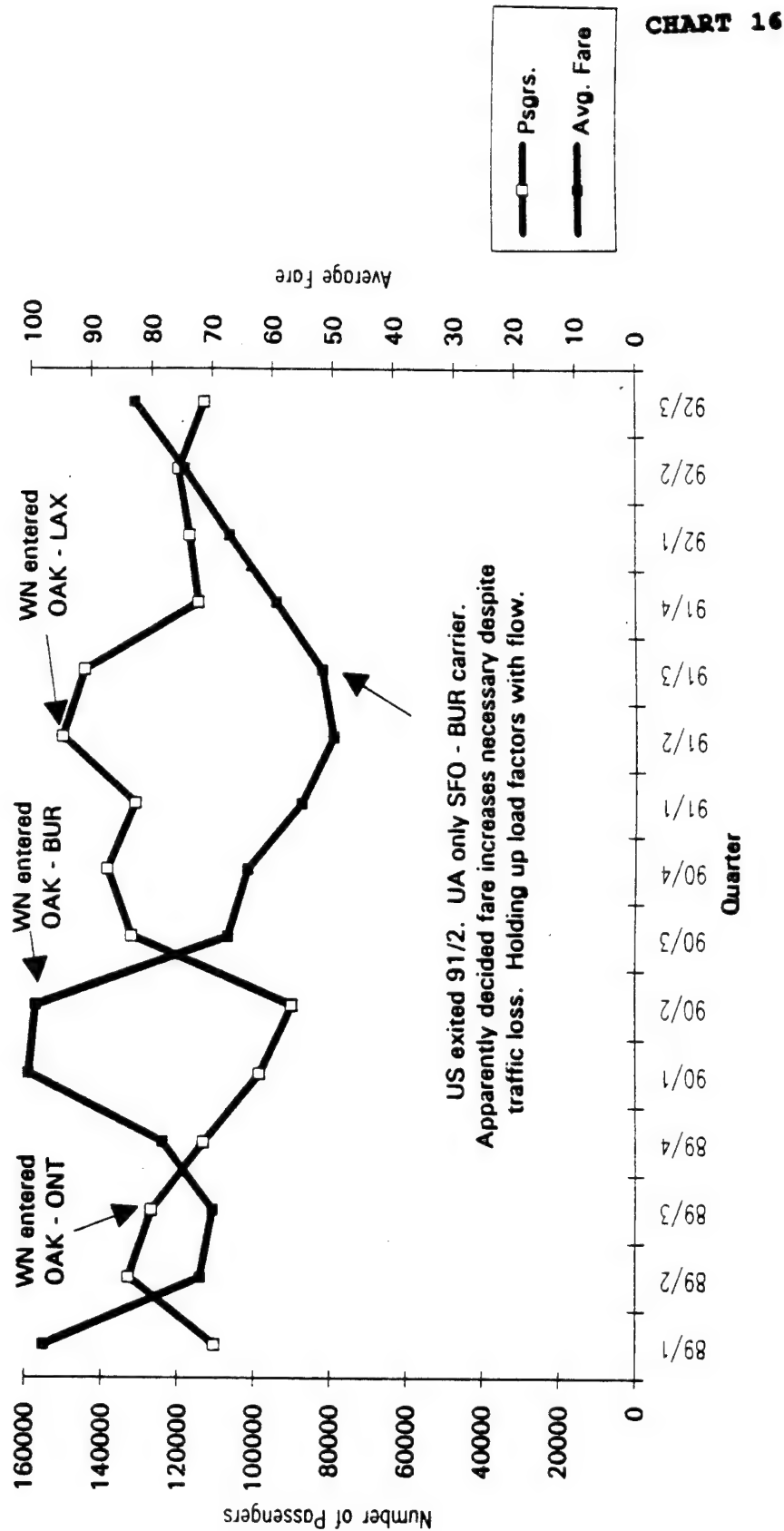
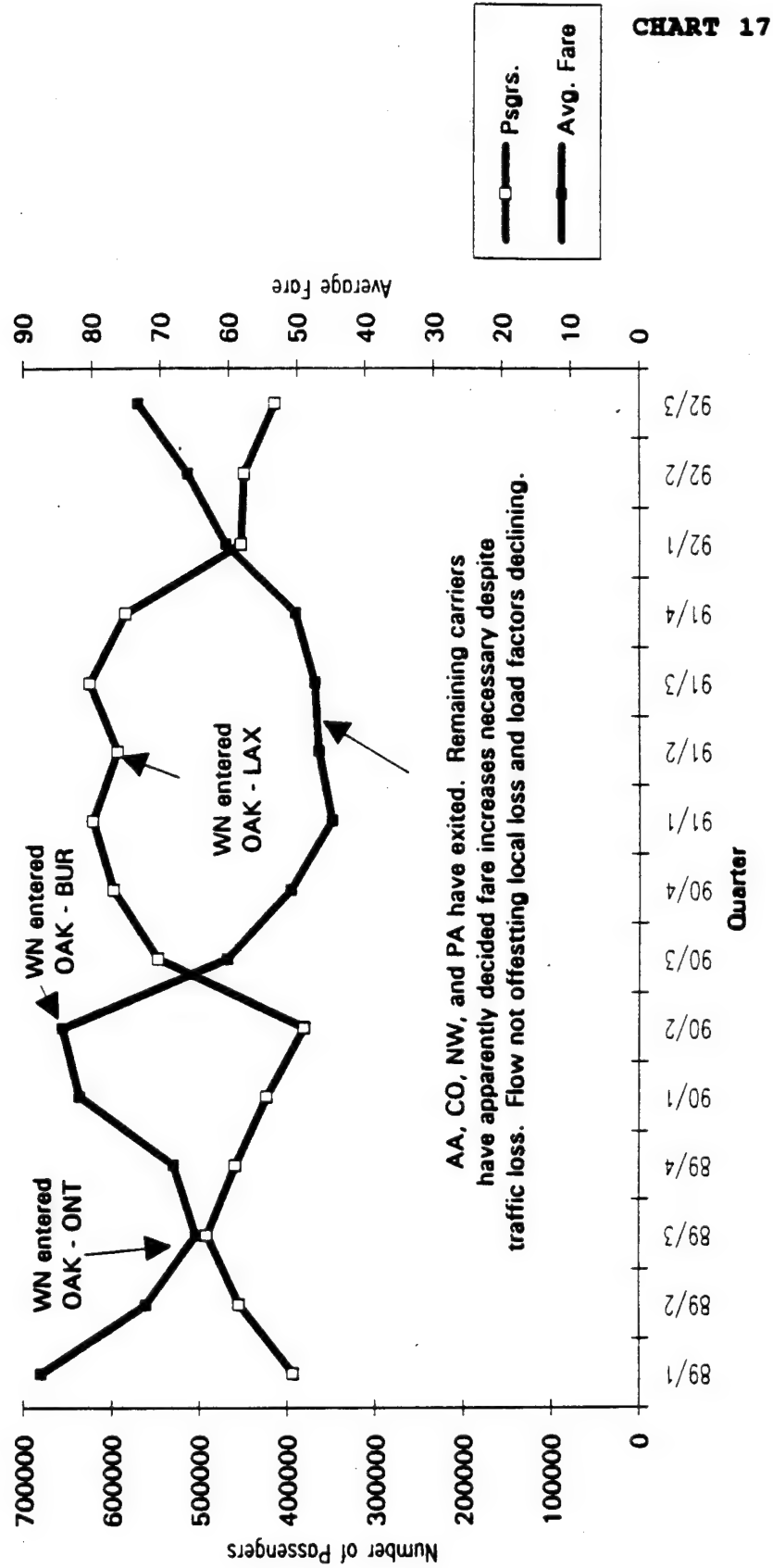


CHART 15

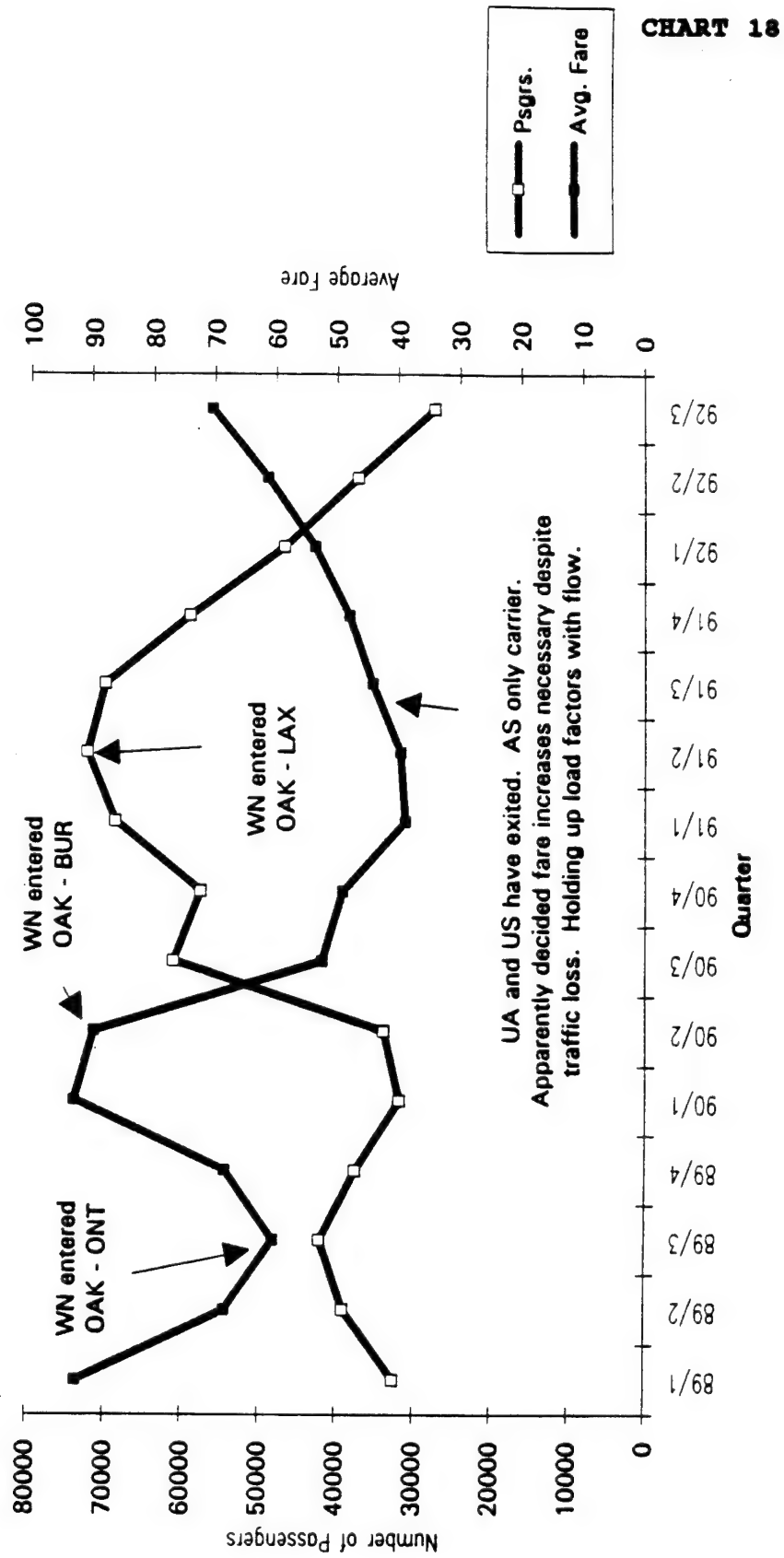
California Corridor: San Francisco - Burbank Effect of Southwest Entry on Price and Traffic (entry at OAK. WN does not serve SFO in corridor)



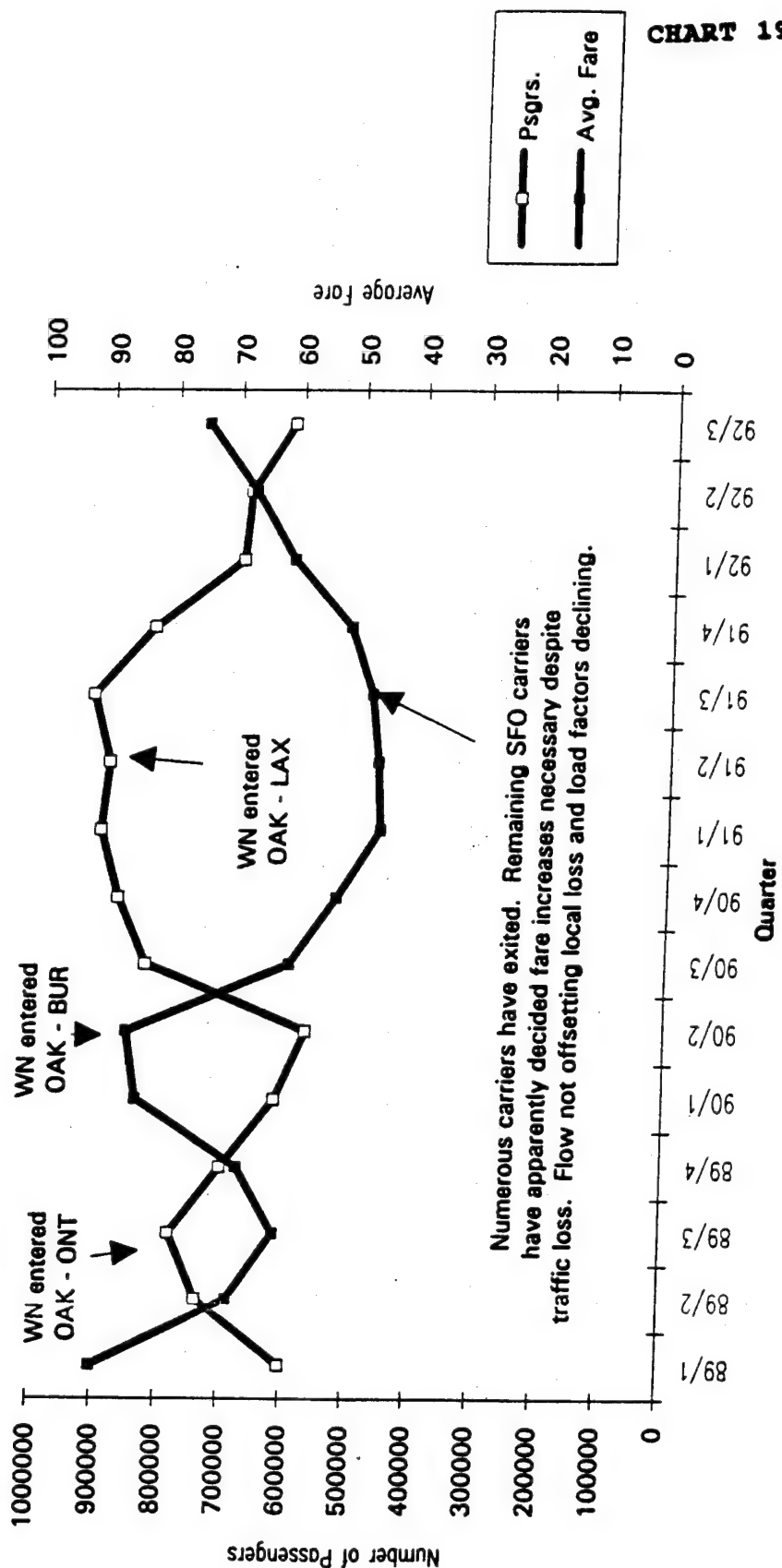
California Corridor: San Francisco - Los Angeles **Effect of Southwest Entry on Price and Traffic** **(entry at OAK. WN does not serve SFO in corridor)**



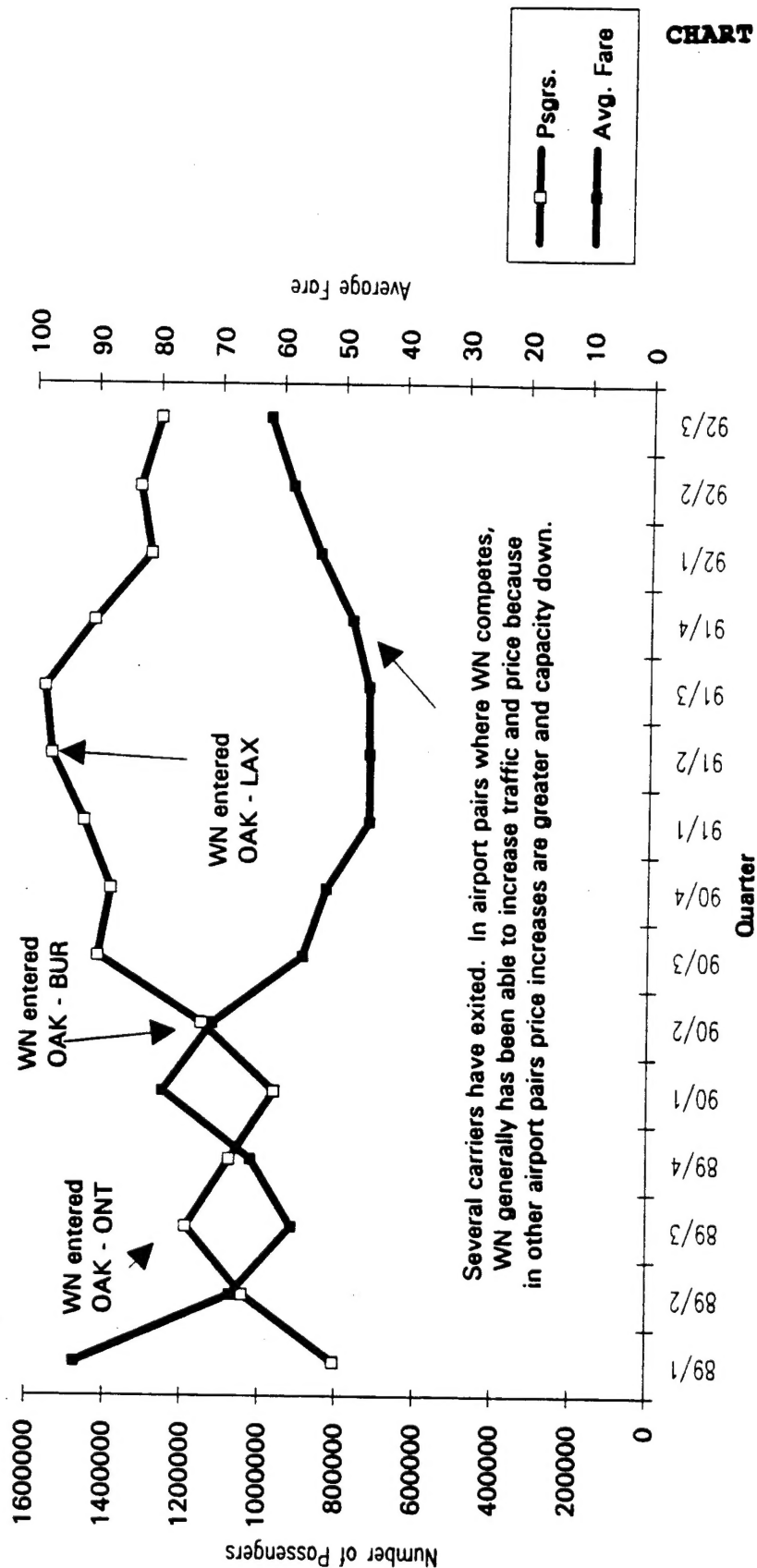
California Corridor: San Francisco - Long Beach
Effect of Southwest Entry on Price and Traffic
(entry at OAK. WN does not serve SFO in corridor)



California Corridor: San Francisco - BUR/LAX/LGB/ONT
Effect of Southwest Entry on Price and Traffic
(entry at OAK. WN does not serve SFO in corridor)

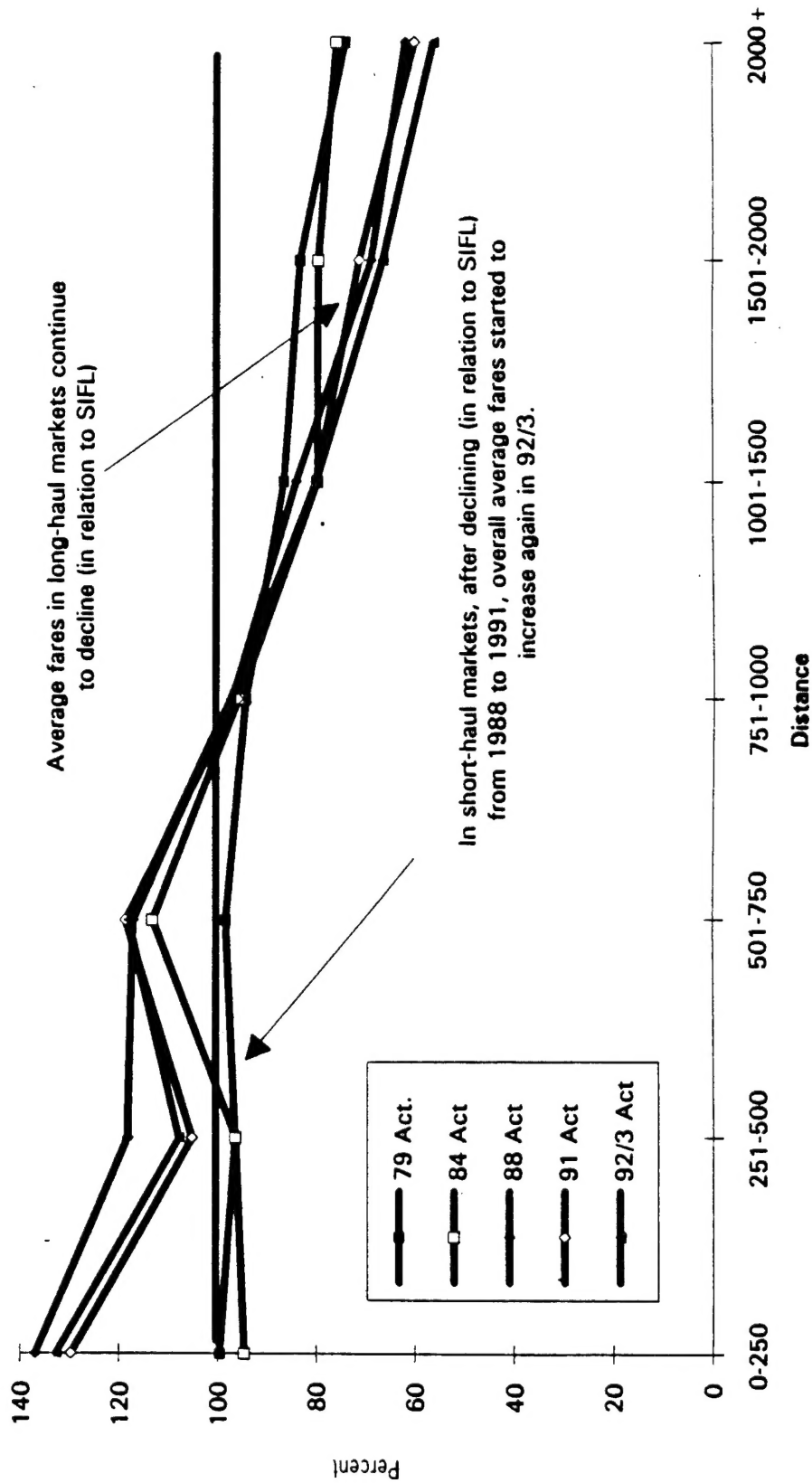


California Corridor: OAK/SFO - BUR/LAX/LGB/ONT **Effect of Southwest Entry on Price and Traffic** **(WN entered 3 of 8 airport pairs: OAK - BUR/LAX/ONT)**

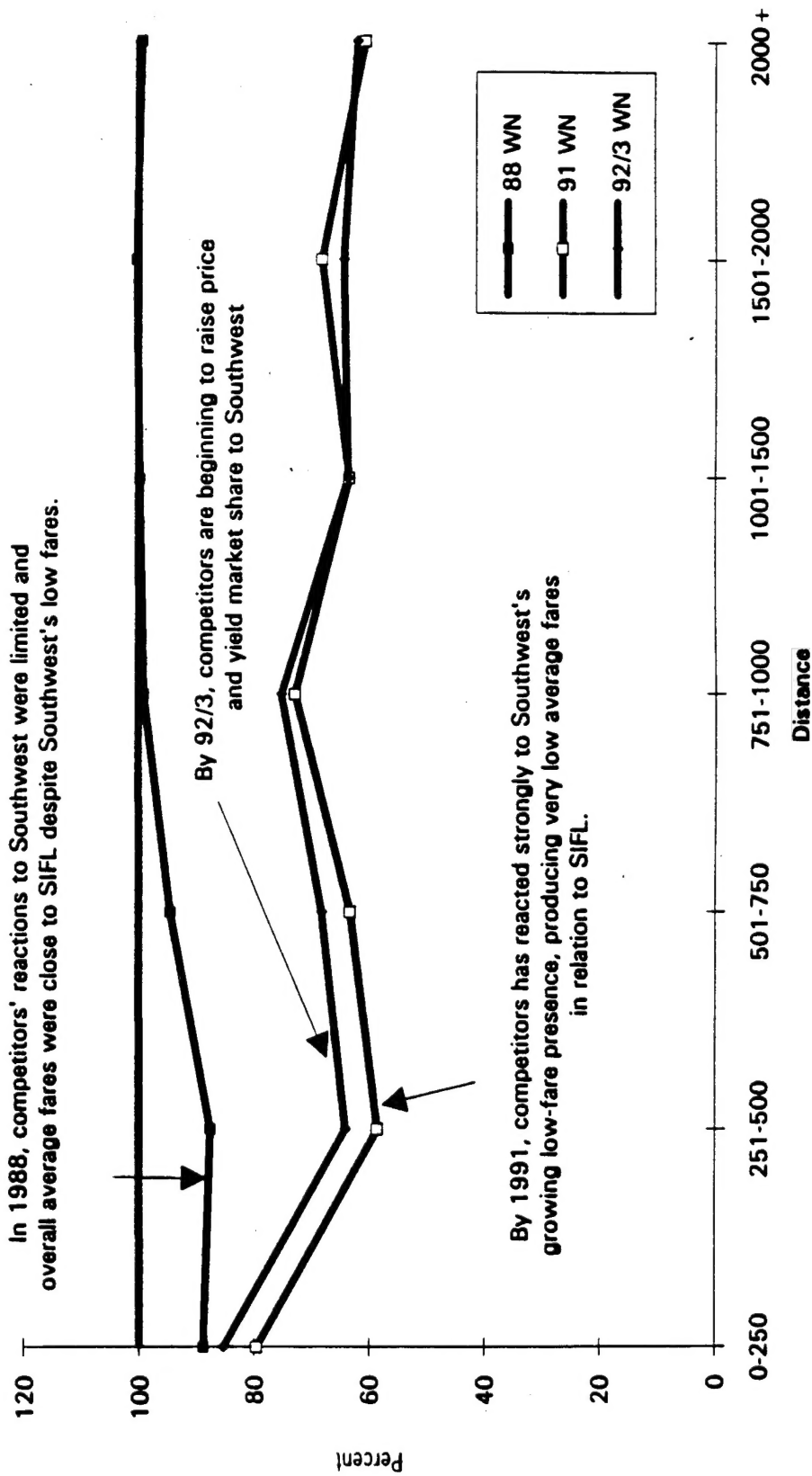


Several carriers have exited. In airport pairs where WN competes, WN generally has been able to increase traffic and price because in other airport pairs price increases are greater and capacity down.

ACTUAL YIELD AS A PERCENT OF SIFL



SOUTHWEST MARKETS VERSUS SIFL



NON-SOUTHWEST MARKETS VERSUS SIFL

Average fares in non-Southwest, short-haul markets are rapidly increasing in relation to SIFL as airlines seek ways to increase revenues.

